

**IN THE CLAIMS:**

- 1     1.     (Original) A network device for use in a computer network carrying network traf-  
2     fic corresponding to sessions, the network device comprising:  
3             a traffic scheduler having one or more resources for use in forwarding network  
4     traffic received at the device at different rates;  
5     a classification engine configured to identify received network traffic based upon prede-  
6     fined criteria; and  
7             a resource reservation engine in communicating relationship with the traffic  
8     scheduler and the classification engine,  
9             wherein, in response to a request to reserve resources for a first data flow associ-  
10    ated with a first session group identifier (ID) and belonging to a first session, the resource  
11    reservation engine is adapted to direct the traffic scheduler to share resources reserved for  
12    one or more second data flows, each associated with a respective session group ID, with  
13    the first data flow provided that (a) the session group ID of the first data flow matches the  
14    session group ID of the one or more second data flows and (b) the one or more second  
15    data flows are not sharing resources with a third data flow having a session group ID that  
16    differs from the first session group ID.

- 1 2. (Original) The network device of claim 1 wherein the resource reservation engine  
2 includes a data structure for storing information associated with the data flows.
- 1 3. (Original) The network device of claim 2 wherein the information includes a shared  
2 field that indicates a method in which resources are shared.
- 1 4. (Original) The network device of claim 1 wherein the session group identifier associ-  
2 ated with a given data flow includes a source address of an entity sourcing the traffic flow  
3 of the given data flow and a resource identifier (ID).
- 1 5. (Original) The network device of claim 1 wherein:  
2 the resource reservation engine utilizes the Resource reSerVation Protocol  
3 (RSVP) specification standard; and  
4 the session group ID of a given data flow is contained in a RSVP Path message  
5 associated with the given data flow.
- 1 6. (Original) The network device of claim 1 wherein the first data flow and the one or  
2 more second data flows carry voice information.
- 1 7. (Original) The network device of claim 1 wherein the first data flow and the one or  
2 more second data flows originate from a single sourcing entity.

1 8. (Original) The network device of claim 1 wherein the first data flow and the one or  
2 more second data flows originate from a single sourcing entity and are directed to two or  
3 more different destination entities.

1 9. (Original) The network device of claim 1 wherein the first data flow and the one or  
2 more second data flows carry voice information and correspond to a call waiting context.

1 10. (Original) The network device of claim 1 wherein in response to a request to reserve  
2 resources for the first data flow that specifies sharing and a set of senders, the resource  
3 reservation engine is adapted to direct the traffic scheduler to share resources reserved for  
4 one or more second data flows that are associated with the set of senders with the first  
5 data flow provided that none of the second data flows are sharing resources with a third  
6 data flow belonging to a session that is different than the first session.

1 11. (Original) The network device of claim 10 wherein the set of senders is an explicit  
2 list of senders included in the request.

1 12. (Original) The network device of claim 10 wherein:  
2 the resource reservation engine is adapted to utilize the Resource reSerVation  
3 Protocol (RSVP); and  
4 the request includes a shared object that specifies the Shared Explicit (SE) style of  
5 sharing.

1 13. (Original) The network device of claim 10 wherein the set of senders includes those  
2 senders associated with data flows whose destination address matches a destination ad-  
3 dress of the first data flow.

1 14. (Original) The network device of claim 10 wherein:  
2 the resource reservation engine is adapted to utilize the Resource reSerVation  
3 Protocol (RSVP); and  
4 the request includes a shared object that specifies the Wildcard Filter (WF) style  
5 of sharing.

1 15. (Original) A network device for use in a computer network carrying network traffic  
2 corresponding to sessions, the network device comprising:  
3 a traffic scheduler having one or more resources for use in forwarding network  
4 traffic received at the device at different rates;  
5 a classification engine configured to identify received network traffic based upon prede-  
6 fined criteria; and  
7 a resource reservation engine in communicating relationship with the traffic  
8 scheduler and the classification engine,  
9 wherein in response to a request to reserve resources for a first session wherein  
10 the request specifies sharing, the resource reservation engine is adapted to direct the traf-  
11 fic scheduler to share resources reserved for one or more data flows associated with a set

12 of senders associated with the request with the first session provided that none of the data  
13 flows are sharing resources with a second session.

1 16. (Original) The network device of claim 15 wherein the set of senders is an explicit  
2 list of senders included in the request.

1 17. (Original) The network device of claim 15 wherein:  
2 the resource reservation engine is adapted to utilize the Resource reSerVation  
3 Protocol (RSVP); and  
4 the request includes a shared object that specifies the Shared Explicit (SE) style of  
5 sharing.

1 18. (Original) The network device of claim 15 wherein the set of senders includes those  
2 senders associated with data flows whose destination address matches a destination ad-  
3 dress of the first session.

1 19. (Original) The network device of claim 15 wherein:  
2 the resource reservation engine is adapted to utilize the Resource reSerVation  
3 Protocol (RSVP); and  
4 the request includes a shared object that specifies the Wildcard Filter (WF) style  
5 of sharing.

1 20. (Original) In a computer network having a plurality of entities interconnected by a  
2 plurality of intermediate network devices having one or more resources for use in for-  
3 warding network traffic corresponding to sessions, a method for sharing resources re-  
4 served for a first data flow with a second data flow, the method comprising the steps of:  
5 receiving a first resource reservation message associated with the first data flow,  
6 the first resource reservation message corresponding to a first session group identifier  
7 (ID);  
8 reserving resources for use with the first data flow;  
9 receiving a second resource reservation message associated with the second data  
10 flow, the second resource reservation message corresponding to a second session group  
11 ID;  
12 comparing the first session group ID to the second session group ID; and  
13 if the two session group IDs match, determining if the first data flow is sharing  
14 the resources reserved for use with the first data flow with a third data flow that has a ses-  
15 sion group ID that differs from the first session group ID and if not, sharing the resources  
16 reserved for use with the first data flow with the second data flow.

1 21. (Original) The method of claim 20 further comprising the step of:  
2 storing the session group ID of the first resource reservation message.

1 22. (Original) The method of claim 21 wherein the session group ID is stored in a data  
2 structure.

1 23. (Original) The method of claim 22 wherein the data structure is a table.

1 24. (Original) The method of claim 20 wherein the session group identifier associated  
2 with a given data flow includes a source address of an entity sourcing the traffic flow and  
3 a resource identifier (ID).

1 25. (Original) The method of claim 24 wherein the first resource reservation message is a  
2 Path message in accordance with the Resource reSerVation Protocol (RSVP) specifica-  
3 tion standard that has been configured to carry the session group ID.

1 26. (Original) The method of claim 25 wherein the resource ID is disposed in a resource  
2 ID object of the RSVP Path message.

1 27. (Original) The method of claim 20 wherein the second resource reservation message  
2 is a Resv message in accordance with the Resource reSerVation Protocol (RSVP) specifi-  
3 cation standard corresponding to the second data flow.

1 28. (Original) In a computer network having a plurality of entities interconnected by a  
2 plurality of intermediate network devices having one or more resources for use in for-

3 warding network traffic corresponding to data flows, a method for sharing resources re-  
4 served for a first data flow with a second data flow, the method comprising the steps of:  
5 receiving a first resource reservation message associated with the first data flow  
6 belonging to a first session, the first resource reservation message specifying a first ses-  
7 sion group identifier (ID);  
8 reserving resources for use with the first data flow;  
9 receiving a second resource reservation message associated with the second data  
10 flow belonging to the first session wherein the second resource reservation message indi-  
11 cates sharing and specifies a set of senders associated with the request; and  
12 sharing the resources reserved for use with the first data flow with the second data  
13 flow provided that no data flow associated with the set of senders are sharing resources  
14 with a third data flow belonging to a second session.

1 29. (Original) The method of claim 28 further comprising the step of:

2 storing the session group ID of the first resource reservation message.

1 30. (Original) The method of claim 29 wherein the session group ID is stored in a data  
2 structure.

1 31. (Original) The method of claim 30 wherein the data structure is a table.



- 1 32. (Original) A computer readable medium comprising computer executable instruc-
- 2 tions for performing the method recited in any one of claims 20, 21, 28 or 29.

Please add new claims 33 *et seq.*, as follows:

1    33. (New) A method in a computer network for sharing resources reserved for a first  
2    data flow with a second data flow, the method comprising the steps of:  
3            receiving a first resource reservation message associated with the first data flow,  
4    the first resource reservation message corresponding to a first session group identifier  
5    (ID);  
6            reserving resources for use with the first data flow;  
7            receiving a second resource reservation message associated with the second data  
8    flow, the second resource reservation message corresponding to a second session group  
9    ID;  
10           comparing the first session group ID to the second session group ID; and  
11           if the two session group IDs match, sharing the resources reserved for use with  
12    the first data flow with the second data flow.

1    34. (New) The method of claim 33, further comprising:  
2            sharing resources reserved for one or more second data flows, each associated  
3    with a respective session group ID, with the first data flow provided that (a) the session  
4    group ID of the first data flow matches the session group ID of the one or more second  
5    data flows and (b) the one or more second data flows are not sharing resources with a  
6    third data flow having a session group ID that differs from the first session group ID.

1 35. (New) The method of claim 33, further comprising:

2 storing information associated with the data flows in data structure.

1 36. (New) The method of claim 33, further comprising:

2 indicating a method in which resources are shared by a field in the second re-  
3 source reservation message.

1 37. (New) The method of claim 33, further comprising:

2 including a source address of an entity sourcing the traffic flow of the given data  
3 flow and a resource identifier (ID) in the first session group identifier and the second ses-  
4 sion group identifier.

1 38. (New) The method of claim 33, further comprising:

2 utilizing the Resource reSerVation Protocol (RSVP) specification standard to re-  
3 serve the resources, and the session group ID of a given data flow is contained in a RSVP  
4 Path message associated with the given data flow.

1 39. (New) The method of claim 33, further comprising:

2 carrying voice information in the first data flow.

1 40. (New) The method of claim 33, further comprising:

2           originating the first data flow and the second data flow from a single sourcing en-  
3   tity.

1   41. (New) The method of claim 33, further comprising:

2           originating the first data flow and the second data flow from a single sourcing en-  
3   tity; and

4           directing first data flow and the second data flow to two or more different destina-  
5   tion entities.

1   42. (New) The method of claim 33, further comprising:

2           carrying voice information in the first data flow and in the second data flow, and  
3   the first data flow and the second data flow corresponding to a call waiting context.

1   43. (New) The method of claim 33, further comprising:

2           adapting a resource reservation engine, in response to a request to reserve re-  
3   sources for the first data flow that specifies sharing and a set of senders, to direct a traffic  
4   scheduler to share resources reserved for a one or more second data flows that are associ-  
5   ated with the set of senders with the first data flow, provided that none of the second data  
6   flows are sharing resources with a third data flow belonging to a session that is different  
7   than the first session.

1   44. (New) The method of claim 43, further comprising:

2           wherein the set of senders is an explicit list of senders included in the request.

1   45. (New) The method of claim 33, further comprising:

2           utilizing the Resource reSerVation Protocol (RSVP) by a resource reservation en-  
3   gine; and

4           including in the request a shared object that specifies the Shared Explicit (SE) :  
5   style of sharing.

1   46. (New) The method of claim 33, further comprising:

2           including in a set of senders those senders associated with data flows whose des-  
3   tination address matches a destination address of the first data flow.

1   47. (New) The method of claim 33, further comprising:

2  
3           utilize the Resource reSerVation Protocol (RSVP) by a resource reservation en-  
4   gine; and

5           including in the request a shared object that specifies the Wildcard Filter (WF)  
6   style of sharing.

1   48. (New) A router, comprising:

2 means for receiving a first resource reservation message associated with a first  
3 data flow, the first resource reservation message corresponding to a first session group  
4 identifier (ID);

5 means for reserving resources for use with the first data flow;

6 means for receiving a second resource reservation message associated with a sec-  
7 ond data flow, the second resource reservation message corresponding to a second ses-  
8 sion group ID;

9 means for comparing the first session group ID to the second session group ID;  
10 and

11 if the two session group IDs match, means for sharing the resources reserved for  
12 use with the first data flow with the second data flow.

1 49. (New) The router of claim 48, further comprising:

2 means for sharing resources reserved for one or more second data flows, each as-  
3 sociated with a respective session group ID, with the first data flow provided that (a) the  
4 session group ID of the first data flow matches the session group ID of the one or more  
5 second data flows and (b) the one or more second data flows are not sharing resources  
6 with a third data flow having a session group ID that differs from the first session group  
7 ID.

1 50. (New) The router of claim 48, further comprising:

2 means for storing information associated with the data flows in data structure.

1 51. (New) The router of claim 48, further comprising:  
2 means for indicating a method in which resources are shared by a field in the sec-  
3 ond resource reservation message.

1 52. (New) The router of claim 48, further comprising:  
2 means for including a source address of an entity sourcing the traffic flow of the  
3 given data flow and a resource identifier (ID) in the first session group identifier and the  
4 second session group identifier.

1 53. (New) The router of claim 48, further comprising:  
2 means for utilizing the Resource reSerVation Protocol (RSVP) specification stan-  
3 dard to reserve the resources, and the session group ID of a given data flow is contained  
4 in a RSVP Path message associated with the given data flow.

1 54. (New) The router of claim 48, further comprising:  
2 means for carrying voice information in the first data flow.

1 55. (New) The router of claim 48, further comprising:  
2 means for originating the first data flow and the second data flow from a single  
3 sourcing entity.

1 56. (New) The router of claim 48, further comprising:

2 means for originating the first data flow and the second data flow from a single  
3 sourcing entity; and

4 means for directing first data flow and the second data flow to two or more differ-  
5 ent destination entities.

1 57. (New) The router of claim 48, further comprising:

2 means for carrying voice information in the first data flow and in the second data  
3 flow, and the first data flow and the second data flow corresponding to a call waiting con-  
4 text.

1 58. (New) The router of claim 48, further comprising:

2 means for adapting a resource reservation engine, in response to a request to re-  
3 serve resources for the first data flow that specifies sharing and a set of senders, to direct  
4 a traffic scheduler to share resources reserved for a one or more second data flows that  
5 are associated with the set of senders with the first data flow, provided that none of the  
6 second data flows are sharing resources with a third data flow belonging to a session that  
7 is different than the first session.

1 59. (New) The router of claim 58, further comprising:

2 wherein the set of senders is an explicit list of senders included in the request.



1 60. (New) The router of claim 48, further comprising:  
2 means for utilizing the Resource reSerVation Protocol (RSVP) by a resource res-  
3 ervation engine; and  
4 means for including in the request a shared object that specifies the Shared Ex-  
5 plicit (SE) style of sharing.

1 61. (New) The router of claim 48, further comprising:  
2 means for including in a set of senders those senders associated with data flows  
3 whose destination address matches a destination address of the first data flow.

1 62. (New) The router of claim 48, further comprising:  
2 means for utilize the Resource reSerVation Protocol (RSVP) by a resource reser-  
3 vation engine; and  
4 including in the request a shared object that specifies the Wildcard Filter (WF)  
5 style of sharing.

1 63. (New) A router comprising:  
2 a receiver to receive a first resource reservation message associated with a first  
3 data flow, the first resource reservation message corresponding to a first session group  
4 identifier (ID);  
5 a reservation entity to reserve resources for use with the first data flow;

6 the receiver to receive a second resource reservation message associated with a  
7 second data flow, the second resource reservation message corresponding to a second  
8 session group ID;

9 the reservation entity to compare the first session group ID to the second session  
10 group ID; and

11 if the two session group IDs match, the reservation entity to share the resources  
12 reserved for use with the first data flow with the second data flow.

1 64. (New) The router of claim 63, further comprising:

2 the reservation entity sharing resources reserved for one or more second data  
3 flows, each associated with a respective session group ID, with the first data flow pro-  
4 vided that (a) the session group ID of the first data flow matches the session group ID of  
5 the one or more second data flows and (b) the one or more second data flows are not  
6 sharing resources with a third data flow having a session group ID that differs from the  
7 first session group ID.

1 65. (New) The router of claim 63, further comprising:

2 a data structure to store information associated with the data flows.

1 66. (New) The router of claim 63, further comprising:

2 a field in the second resource reservation message to indicate a method in which  
3 resources are shared.

1 67. (New) The router of claim 63, further comprising:

2 a source address of an entity sourcing the traffic flow of the given data flow and a  
3 resource identifier (ID) included in the first session group identifier and the second ses-  
4 sion group identifier.

1 68. (New) The router of claim 63, further comprising:

2 an RSVP entity to utilize the Resource reSerVation Protocol (RSVP) specification  
3 standard to reserve the resources, and the session group ID of a given data flow is con-  
4 tained in a RSVP Path message associated with the given data flow.

1 69. (New) The router of claim 63, further comprising:

2 the first data flow carrying voice information.

1 70. (New) The router of claim 63, further comprising:

2 a single sourcing entity to originate the first data flow and the second data flow.

1 71. (New) The router of claim 63, further comprising:

2 a single sourcing entity to originate the first data flow and the second data flow ;  
3 and

4 means for directing first data flow and the second data flow to two or more differ-  
5 ent destination entities.

1 72. (New) The router of claim 63, further comprising:

2 means for carrying voice information in the first data flow and in the second data  
3 flow, and the first data flow and the second data flow corresponding to a call waiting con-  
4 text.

1 73. (New) The router of claim 63, further comprising:

2 a resource reservation engine to direct, in response to a request to reserve re-  
3 sources for the first data flow that specifies sharing and a set of senders, a traffic sched-  
4 uler to share resources reserved for a one or more second data flows that are associated  
5 with the set of senders with the first data flow, provided that none of the second data  
6 flows are sharing resources with a third data flow belonging to a session that is different  
7 than the first session.

1 74. (New) The router of claim 73, further comprising:

2 an explicit list of senders included in the request to give the set of senders.

1 75. (New) The router of claim 63, further comprising:

2 a resource reservation engine to utilize the Resource reSerVation Protocol  
3 (RSVP), and to include in the request a shared object that specifies the Shared Explicit  
4 (SE) style of sharing.

1 76. (New) The router of claim 63, further comprising:  
2 means for including in a set of senders those senders associated with data flows  
3 whose destination address matches a destination address of the first data flow.

1 77. (New) The router of claim 63, further comprising:  
2 a resource reservation engine to utilize the Resource reSerVation Protocol (RSVP), and  
3 to include in the request a shared object that specifies the Wildcard Filter (WF) style of  
4 sharing.